# SILICON NPN TRANSISTOR EPITAXIAL PLANAR TYPE (PCT PROCESS)

#### **APPLICATIONS**

■ Low Noise Audio Amplifier Applications.

#### **FEATURES**

The 2SC 3200 is a transistor for low frequency and low noise applications. This device is designed to lower noise figure in the region of low signal source impedance, and to lower the pulse noise.

This is recommended for the first stages of EQ amplifiers.

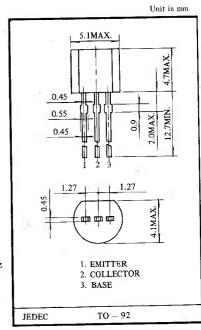
Low Noise

:NF=4dB(Typ.),  $R_g=100\Omega$ ,  $V_{CE}=6V$ ,  $I_C=100\mu A$ , f=1KHz:NF=0.5dB(Typ.),  $R_g=1K\Omega$ ,  $V_{CE}=6V$ ,  $I_C=100\mu A$ , f=1KHz

• Low Pulse Noise: Low 1/f Noise

• High DC Current Gain:  $h_{FE} = 200 \sim 700$ 

• High Breakdown Voltage: V<sub>CEO</sub> = 120 V



#### ■ MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC	SYMBOL	RATING UNIT		CHARACTERISTIC	SYMB0L	RATING	UNIT
Collector-Base Voltage	V <sub>CBO</sub>	120	V	Emitter Current	$I_{E}$	-100	mA
Collector-Emitter Voltage	V <sub>CEO</sub>	120	V	Collector Power Dissipation	Pc	300	mW
Emitter-Base Voltage			Junction Temperature	Ti	125	${\mathbb C}$	
Collector Current	$I_{\rm c}$	100	m A	Storage Temperature Range	Tstg	-55~125	°C

### ■ ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
Collector Cut-off Current	$I_{cbo}$	$V_{CB} = 120 V, I_{E} = 0$		_	100	n A	
Emitter Cut-off Current	I <sub>EBO</sub>	$V_{EB} = 5V, I_{C} = 0$		_	100	nΑ	
Collector-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	$I_c=1\text{mA}, I_B=0$	120			V	
DC Current Gain	h FE (Note)	$V_{CE}=6V$ , $I_{C}=2mA$	200		700		
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	$I_{C}=10\text{mA}, I_{B}=1\text{mA}$			0.3	У	
Base-Emitter Voltage	V <sub>BE</sub>	$V_{CE} = 6V$ , $I_{C} = 2mA$		0.65		V	
Transition Frequency	f <sub>T</sub>	$V_{CE}=6V$ , $I_{C}=1mA$	_	100		MHz	
Collector Output Capacitance	C <sub>ob</sub>	$V_{CB} = 10V$ , $I_{E} = 0$ , $f = 1 MHz$	-	3.0		pF	
· ·	NF	$V_{CE} = 6V, I_{C} = 100 \mu A, f = 10 Hz, Rg = 10 k\Omega$	1 <del>-</del>	_	6	dB	
Noise Figure		$V_{CE} = 6V$ , $I_{C} = 100 \mu A$ $f = 1 \text{kHz}$ , $Rg = 10 \text{K}\Omega$	_	_	2		
		$V_{CE} = 6V$ , $I_{C} = 100 \mu A$ f=1kHz, $Rg = 100 \Omega$	_	4			

## NOTE: According to h<sub>FE</sub>, Classified as follows.

ļ	GR	200 – 400	BL	350 – 700